

Input cell

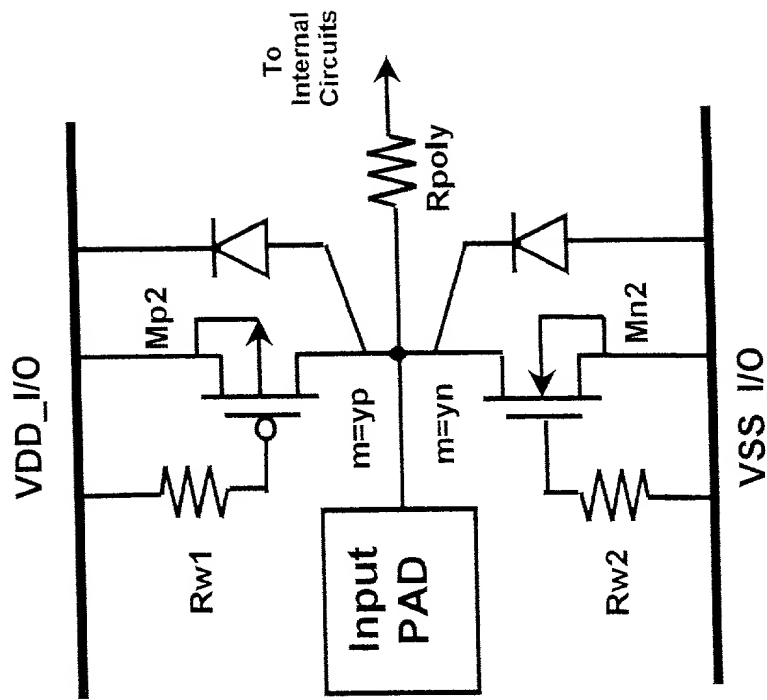


Fig.1(b)  
Prior Art

Output cell

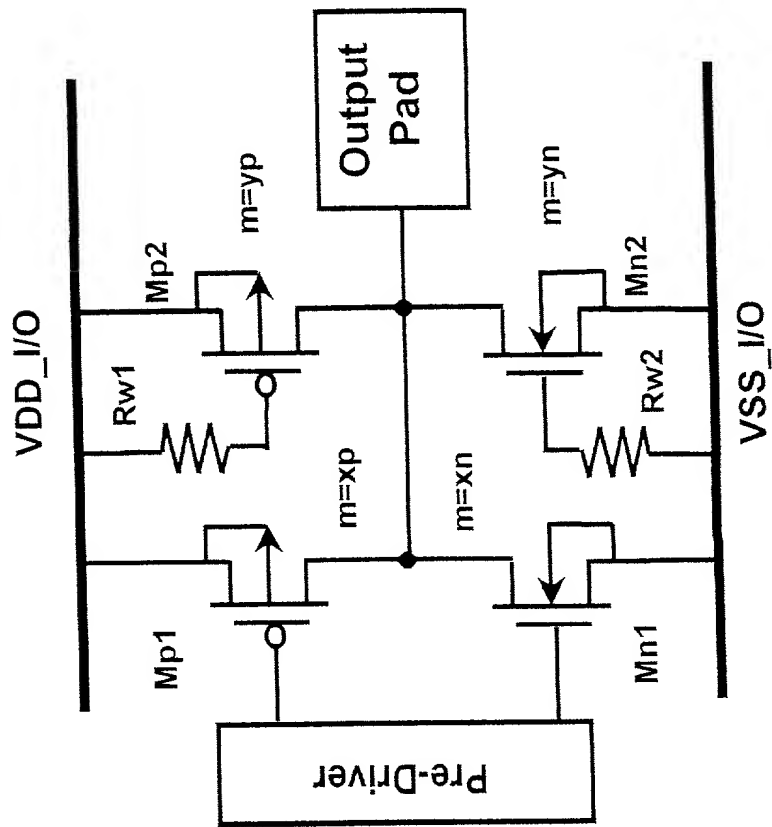
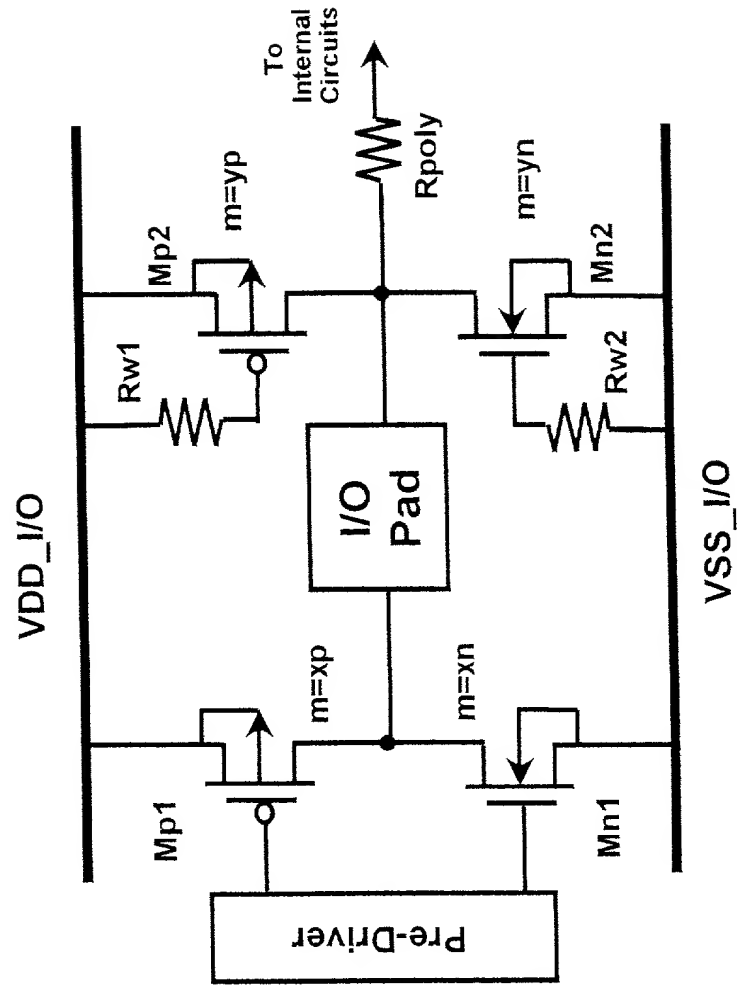


Fig.1(a)  
Prior Art

## Bi-directional cell



**Fig. 1(c)**  
**Prior Art**

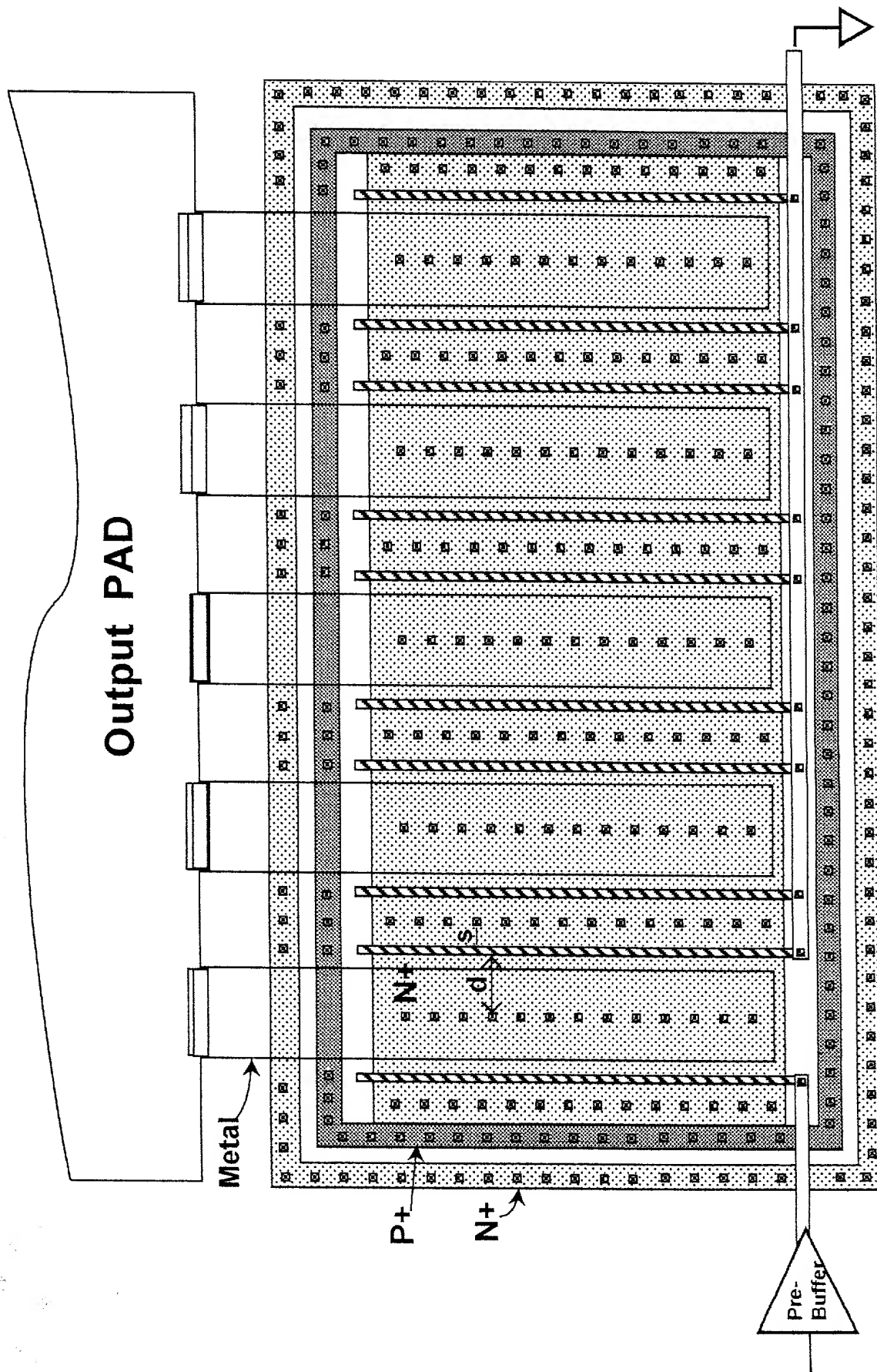


Fig.2(a)  
Prior Art

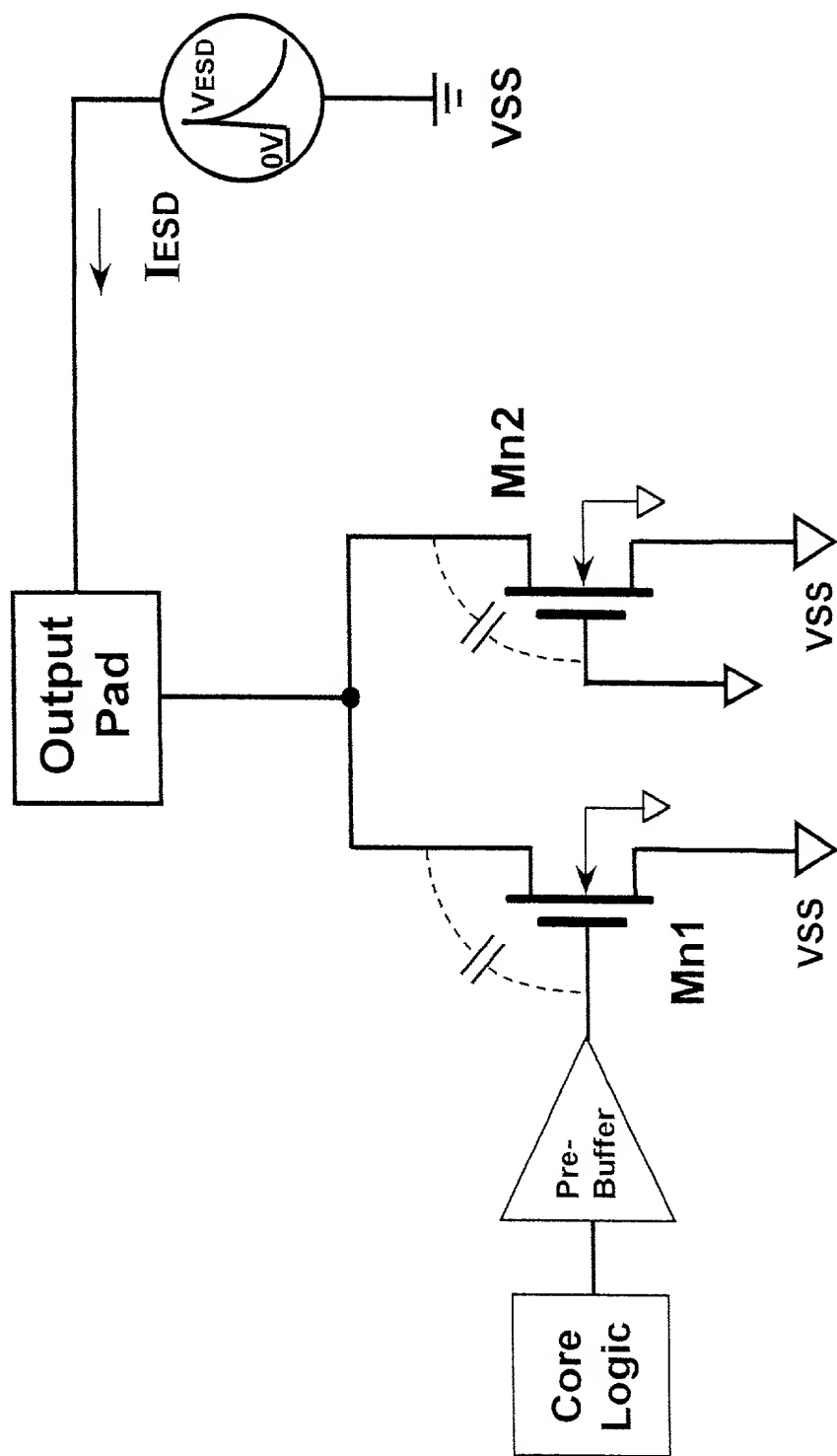


Fig.2(b)

Prior Art

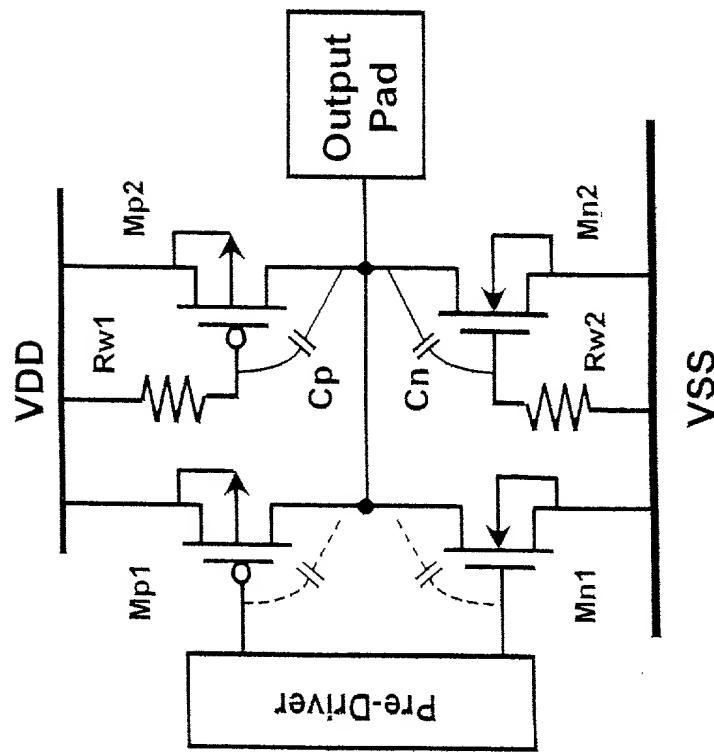


Fig.3  
Prior Art

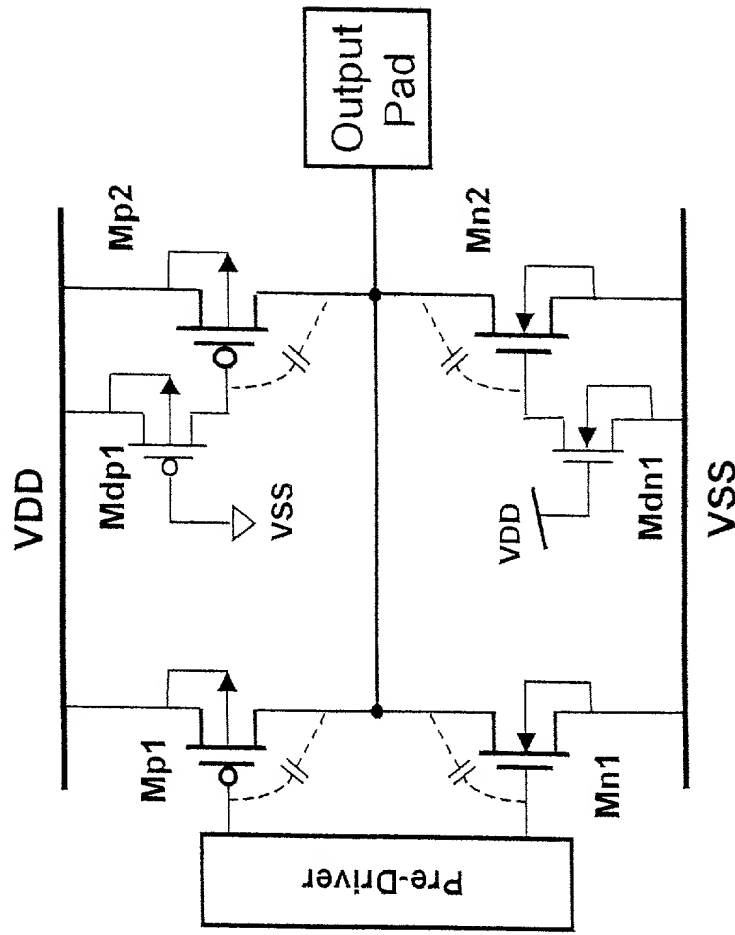


Fig.4  
Prior Art

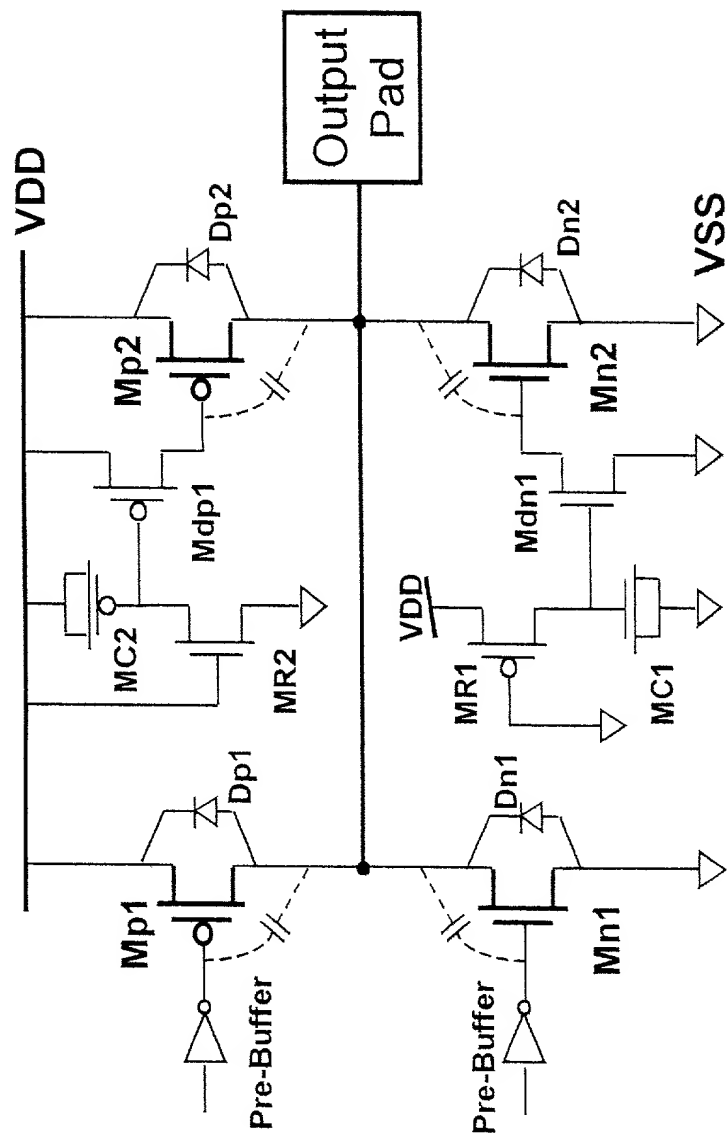


Fig.5  
Prior Art

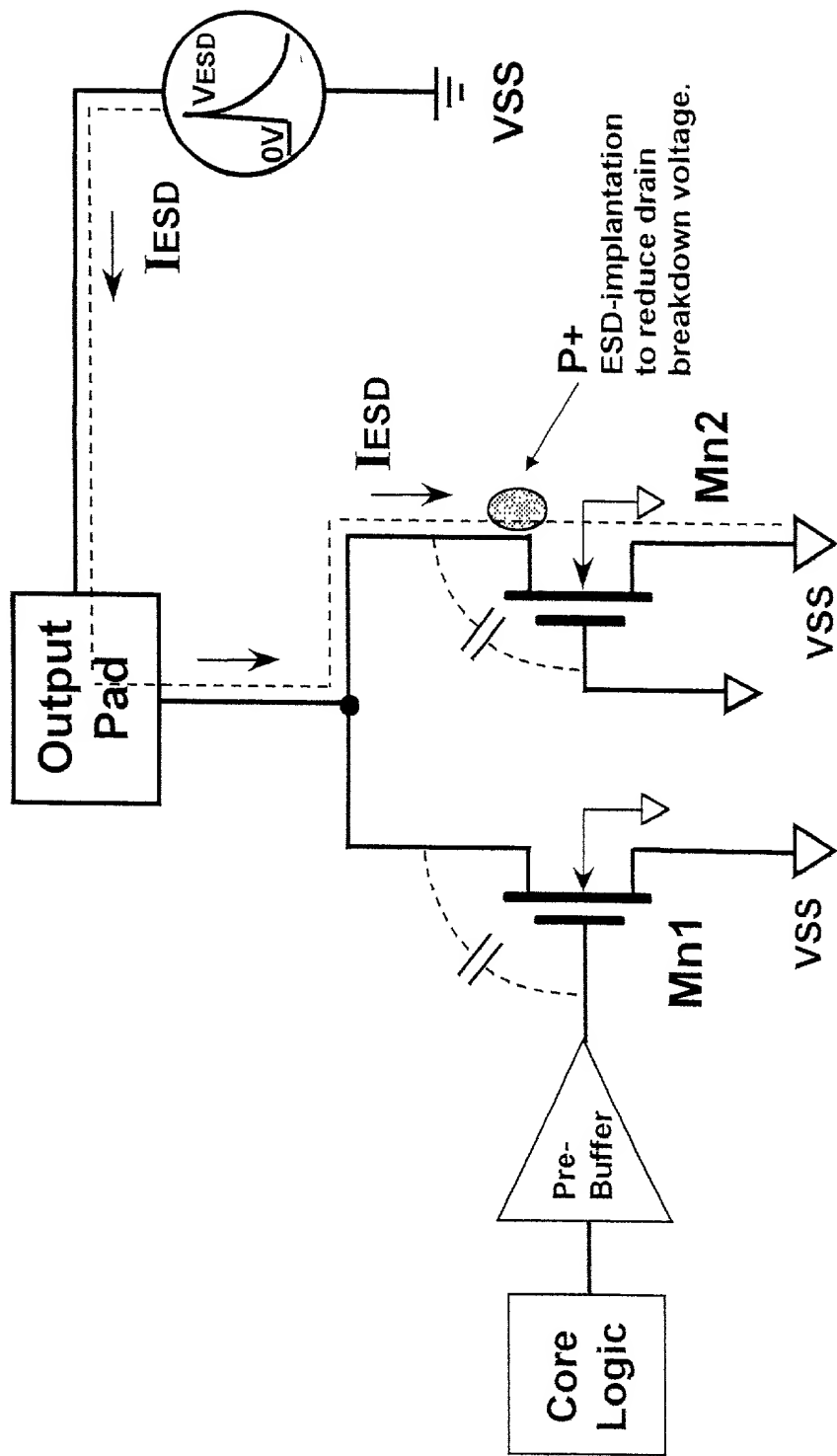


Fig.6(a)

Prior Art

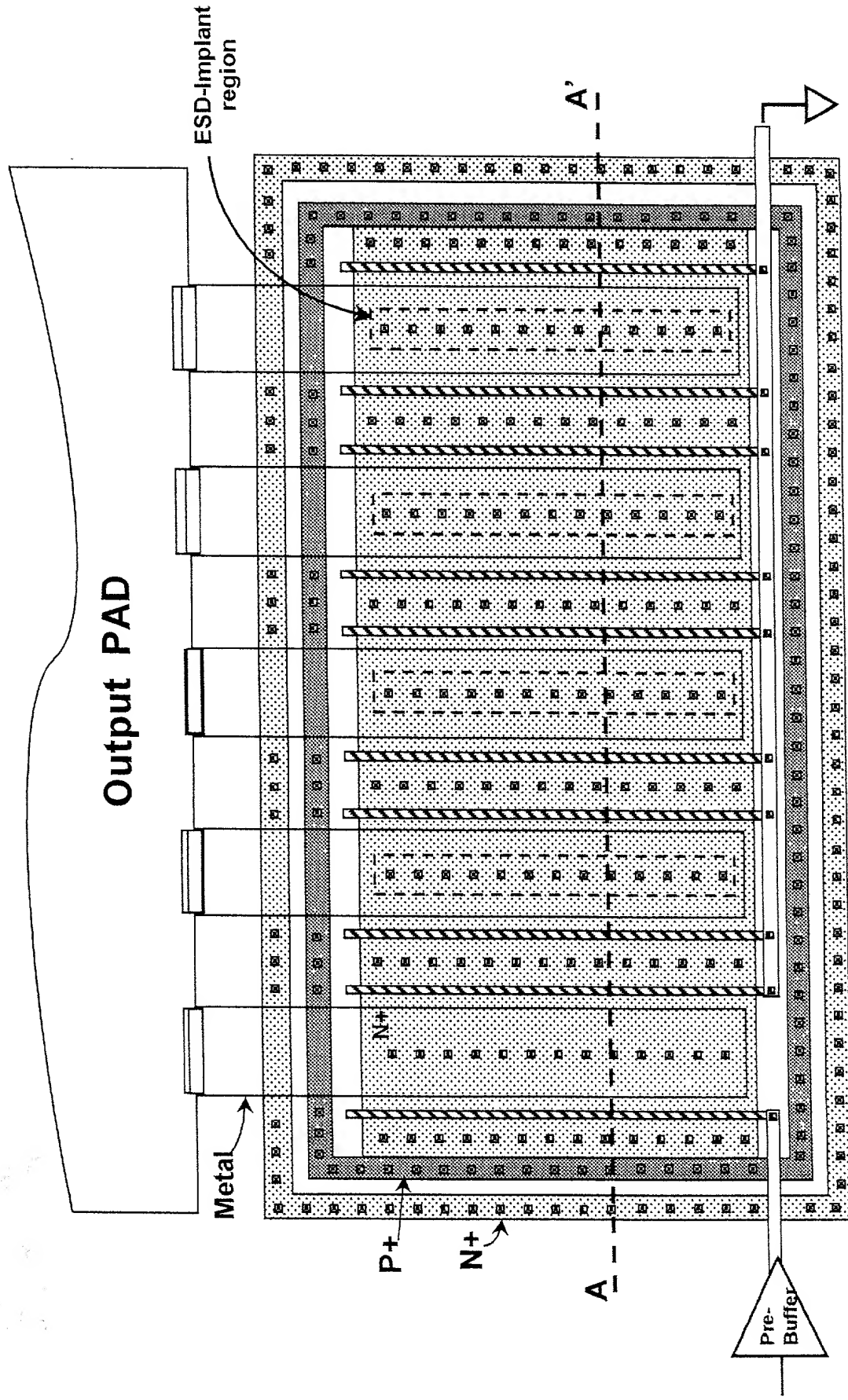


Fig.6(b)  
Prior Art

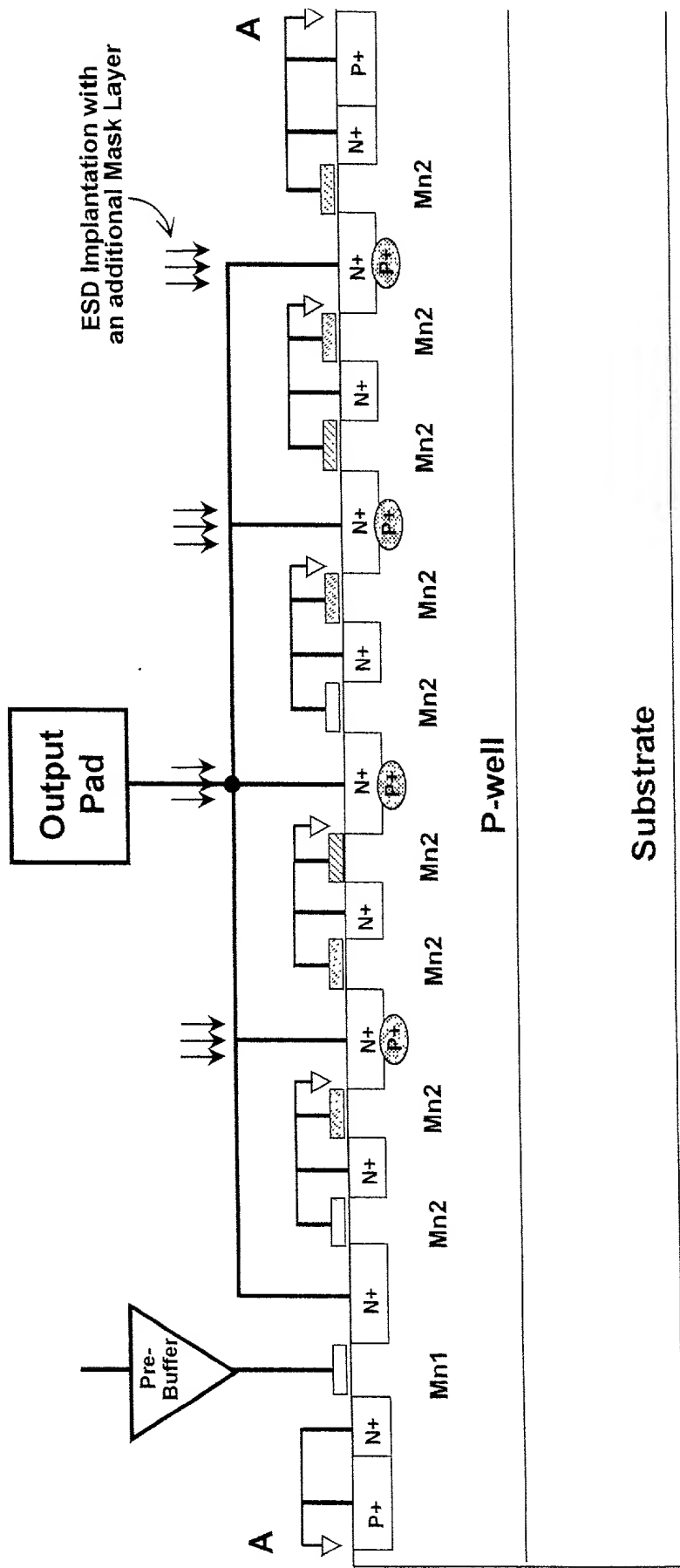
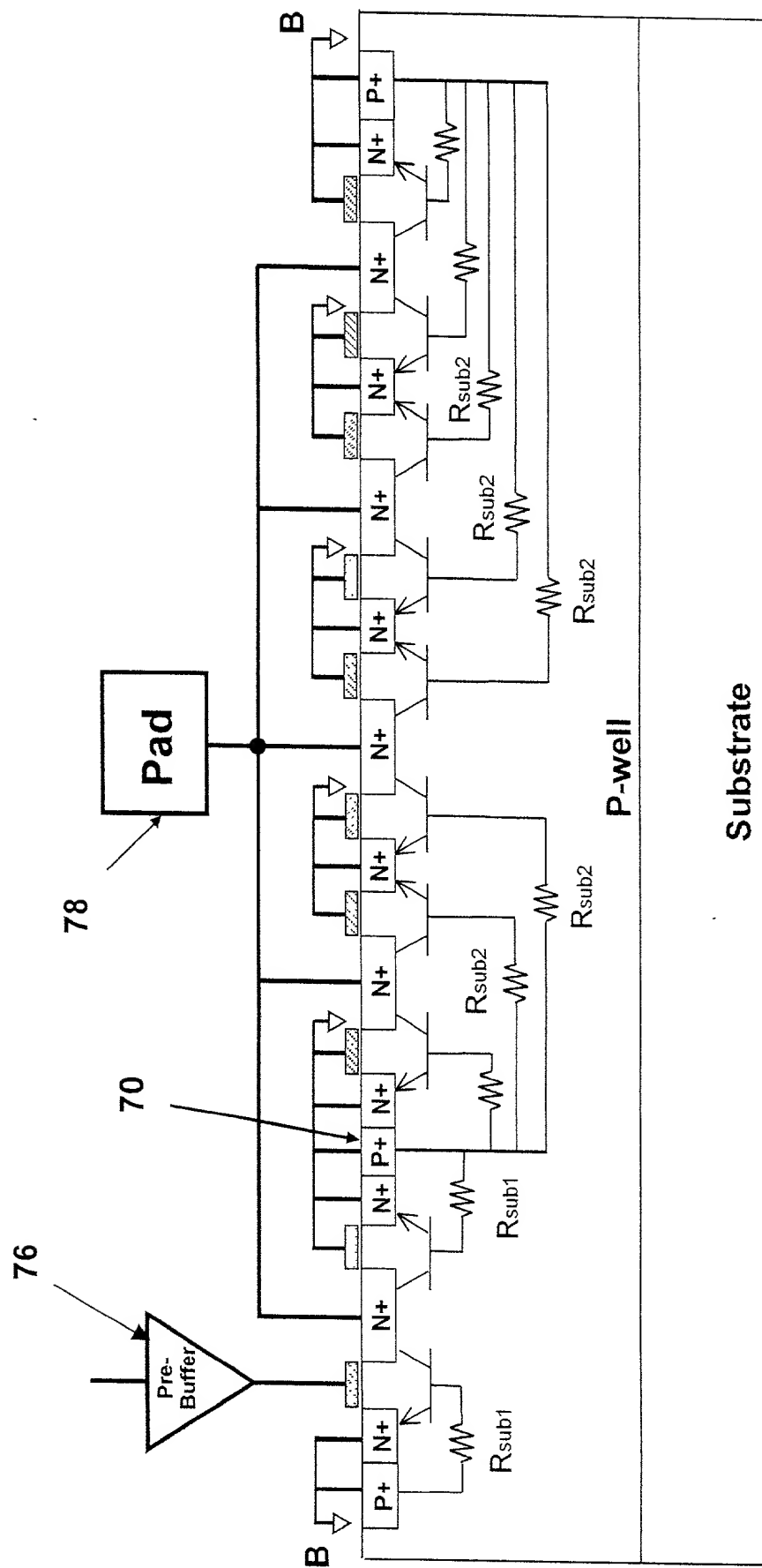


Fig.6(c)  
Prior Art



**Fig. 7(a)**

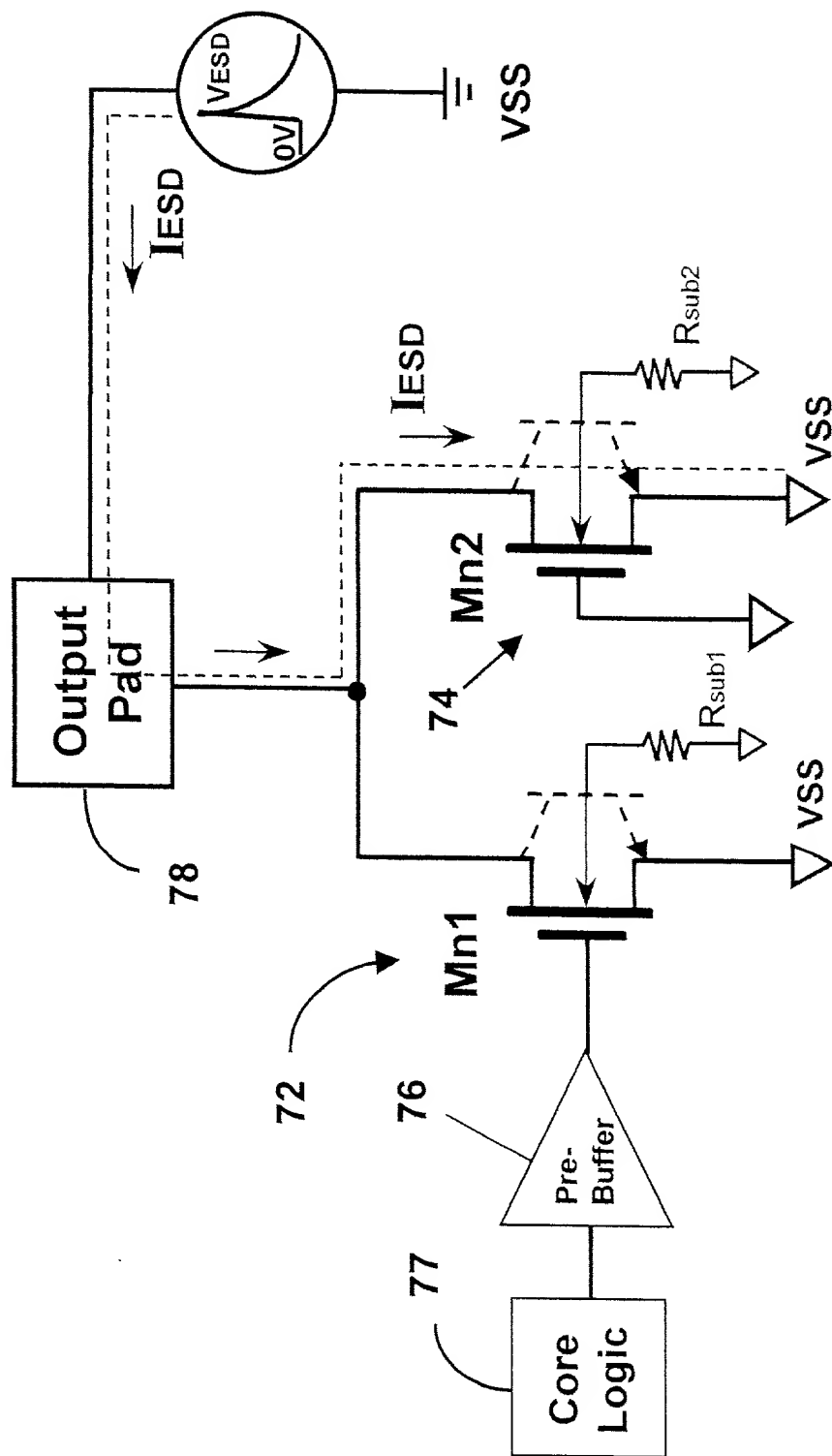
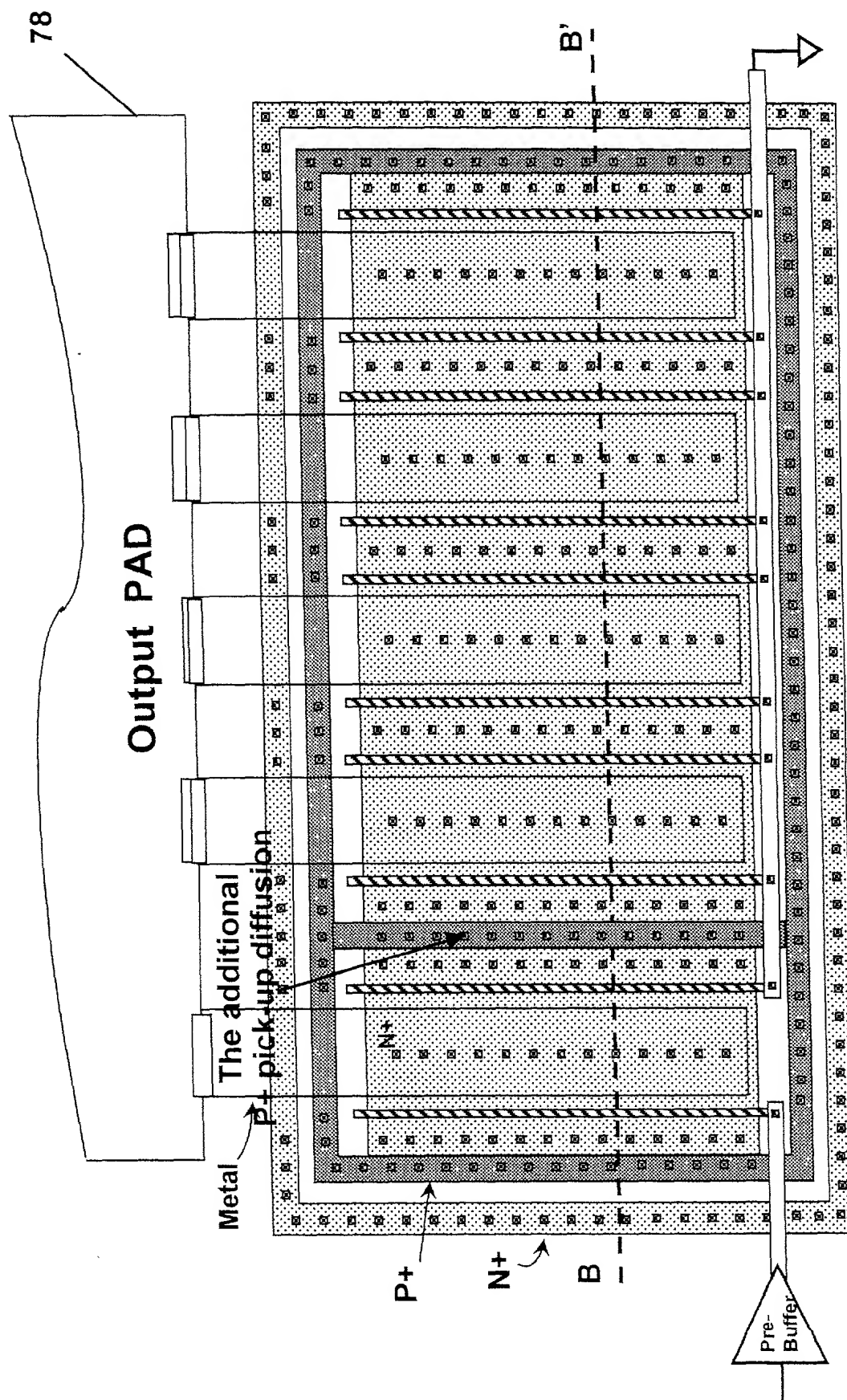


Fig. 7(b)



**Fig. 7(c)**

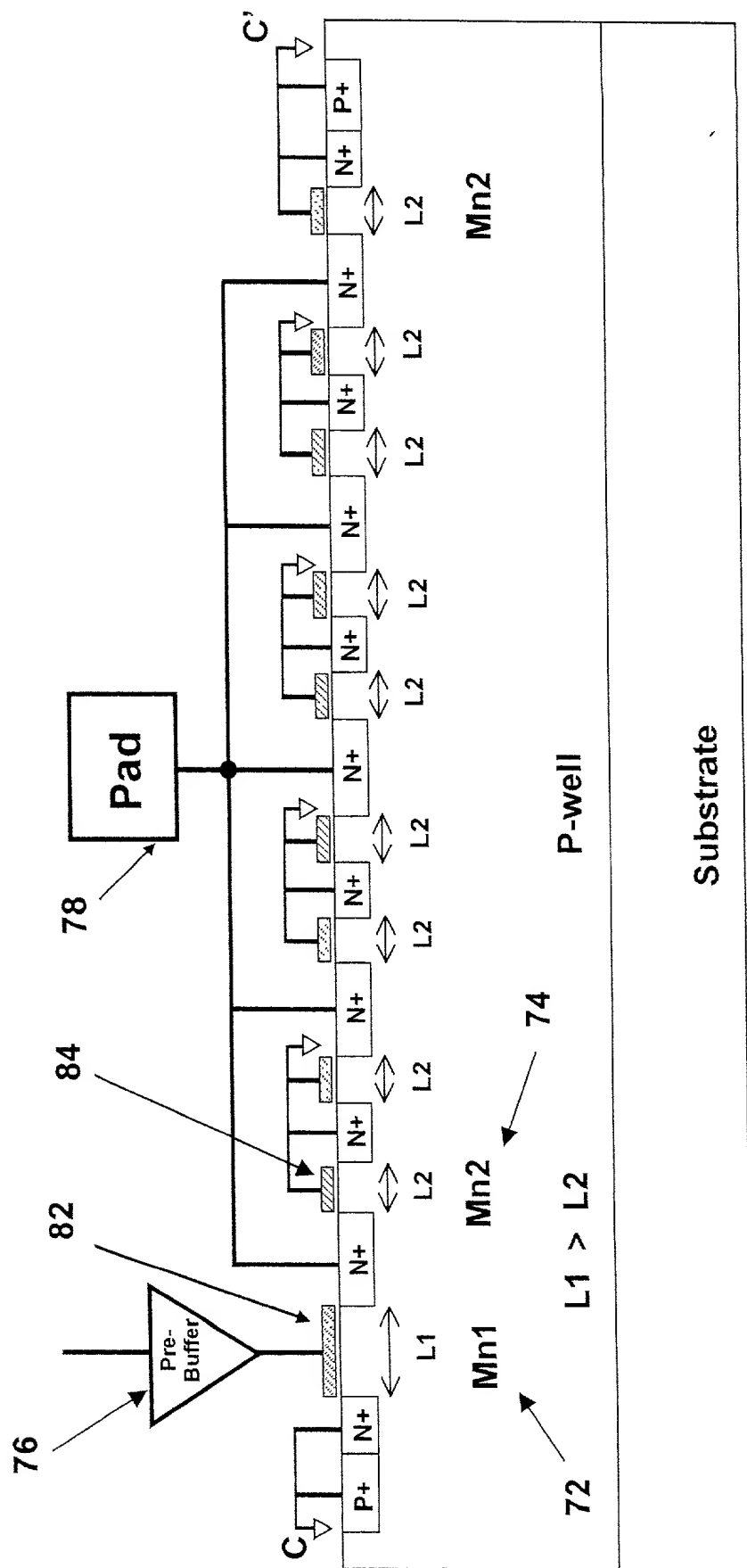


Fig. 8(a)

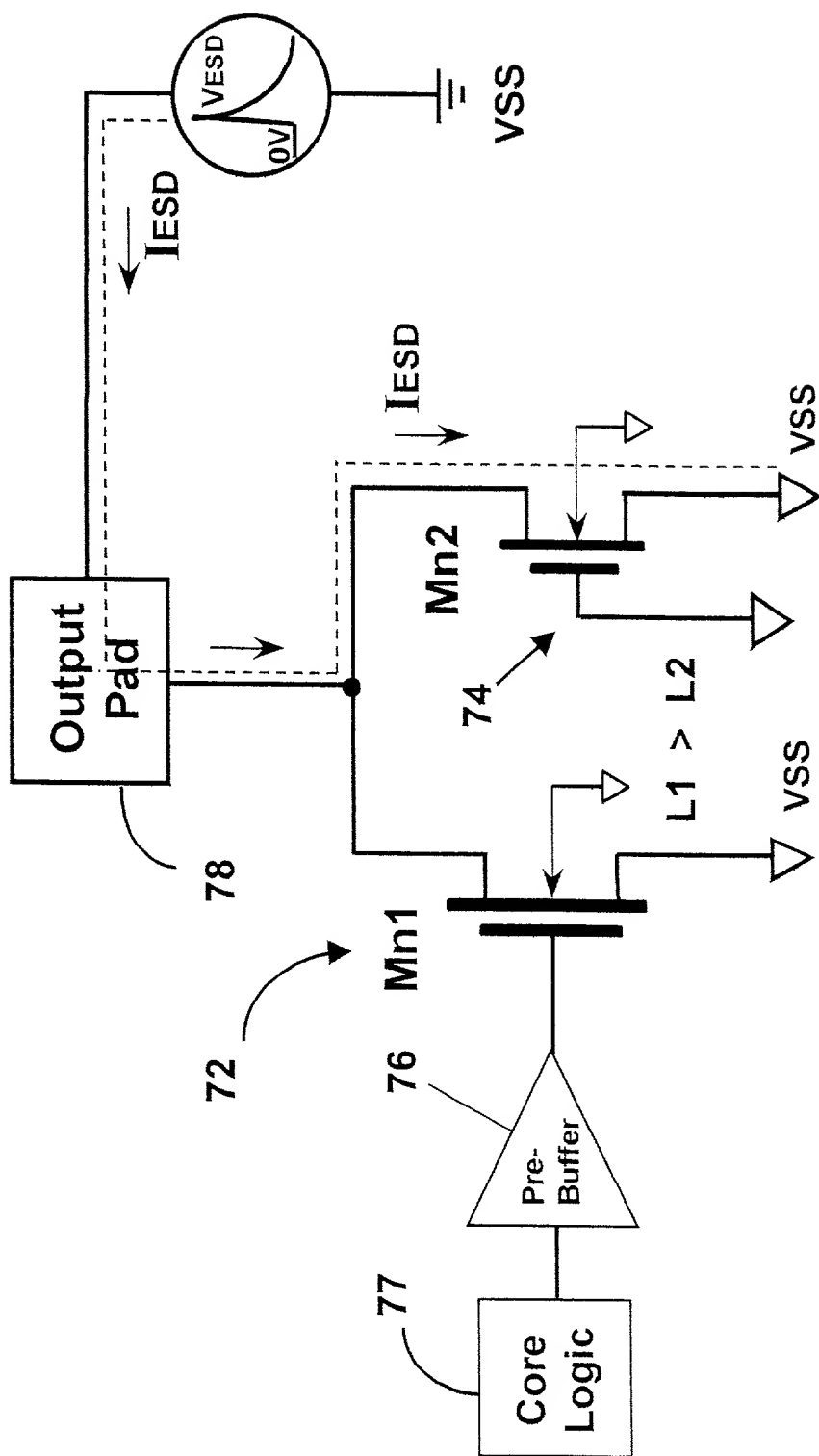


Fig.8(b)

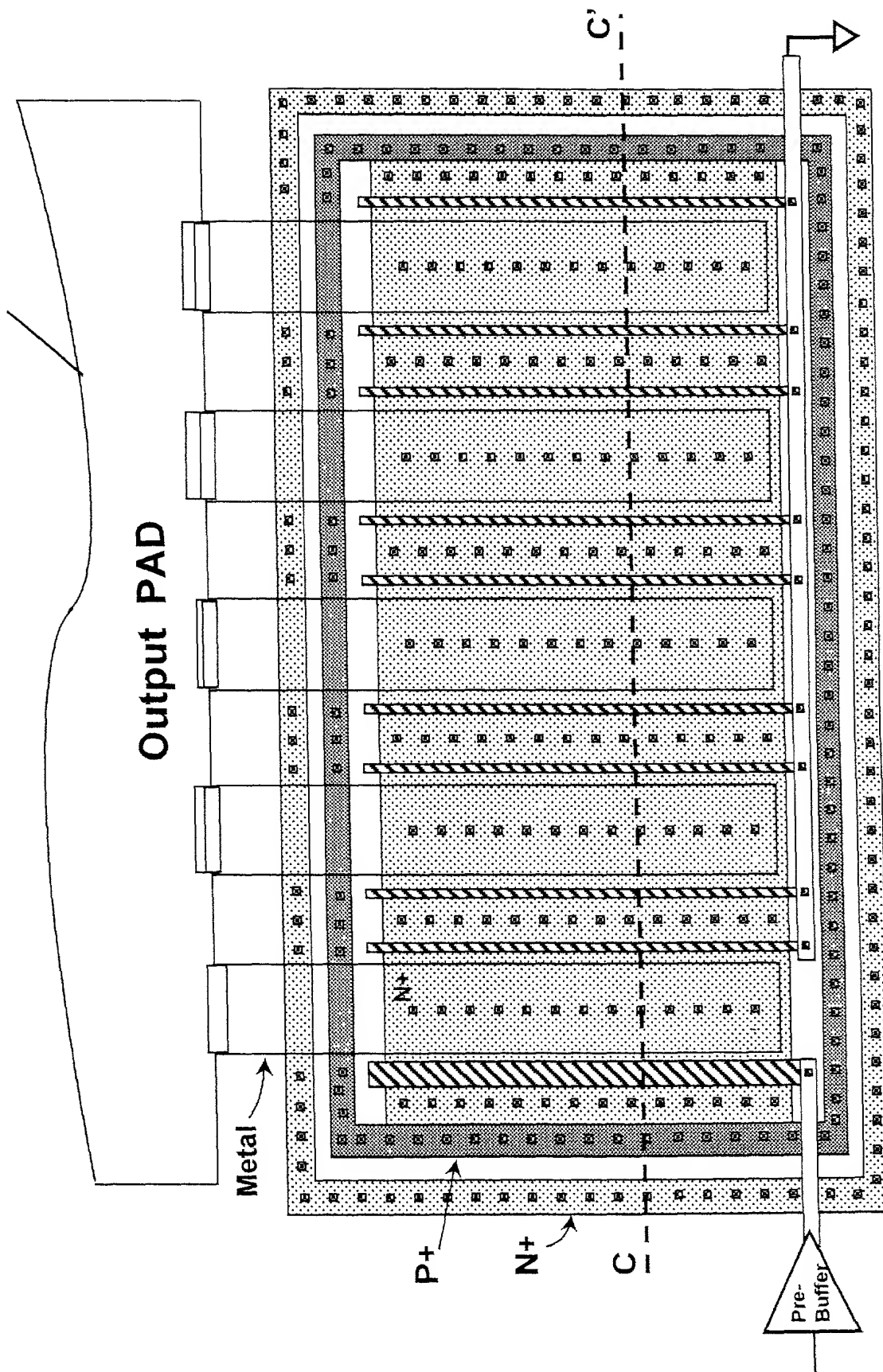
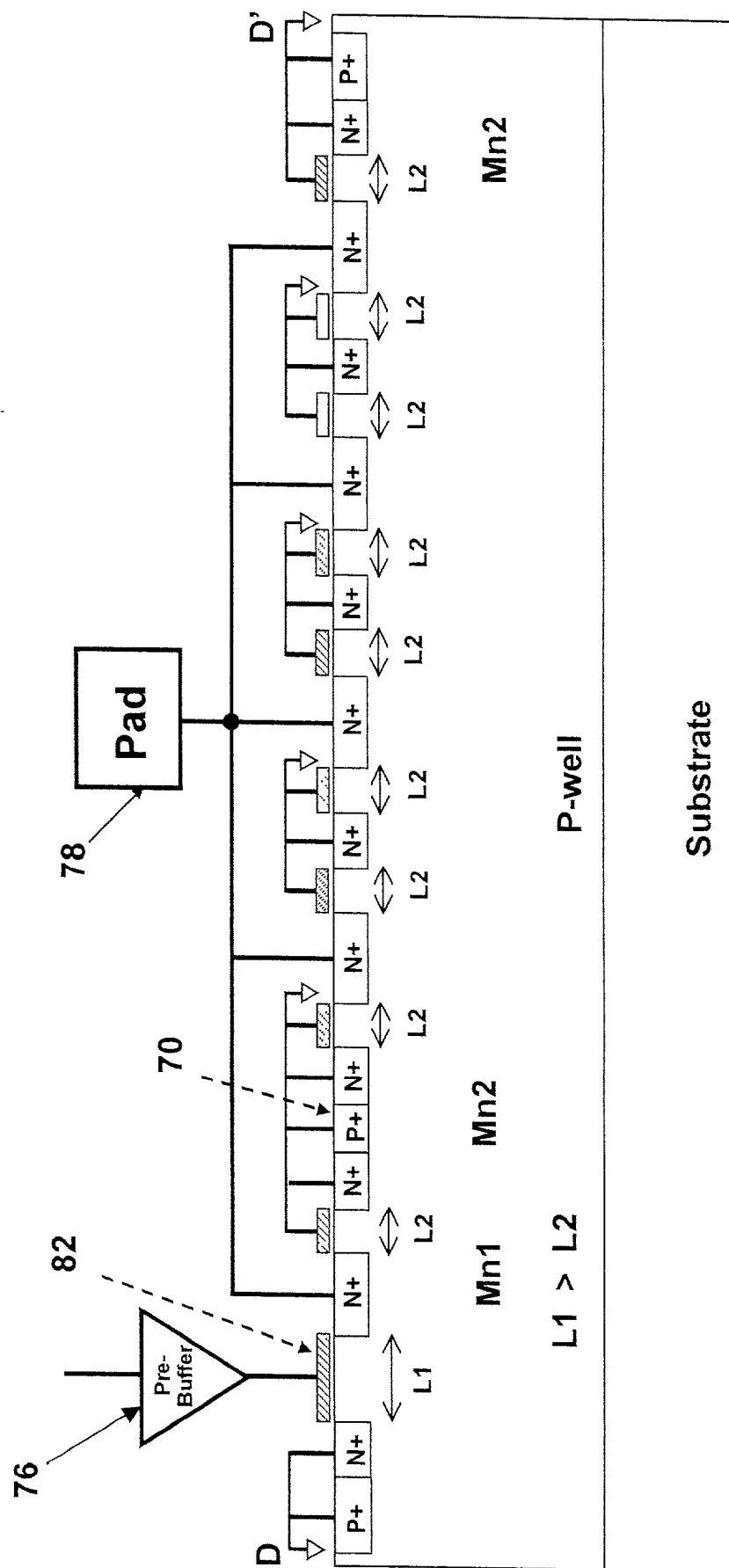


Fig.8(c)



**Fig. 9(a)**

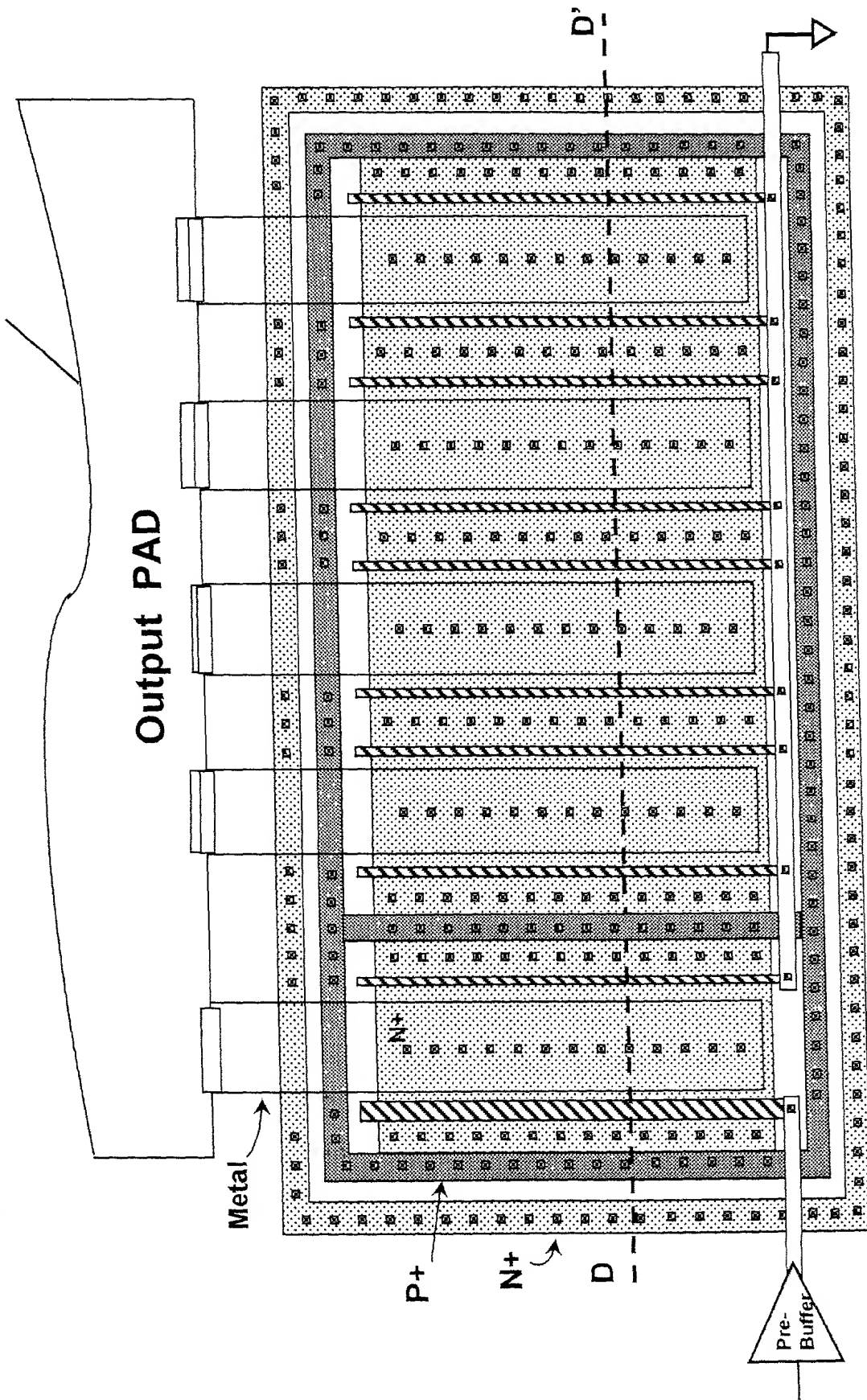


Fig. 9(b)

Input cell

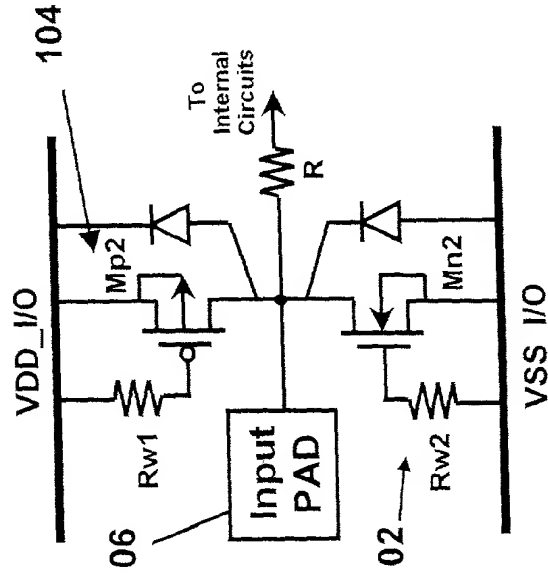


Fig.10(a)

Layout of Mn2 in the Input cell

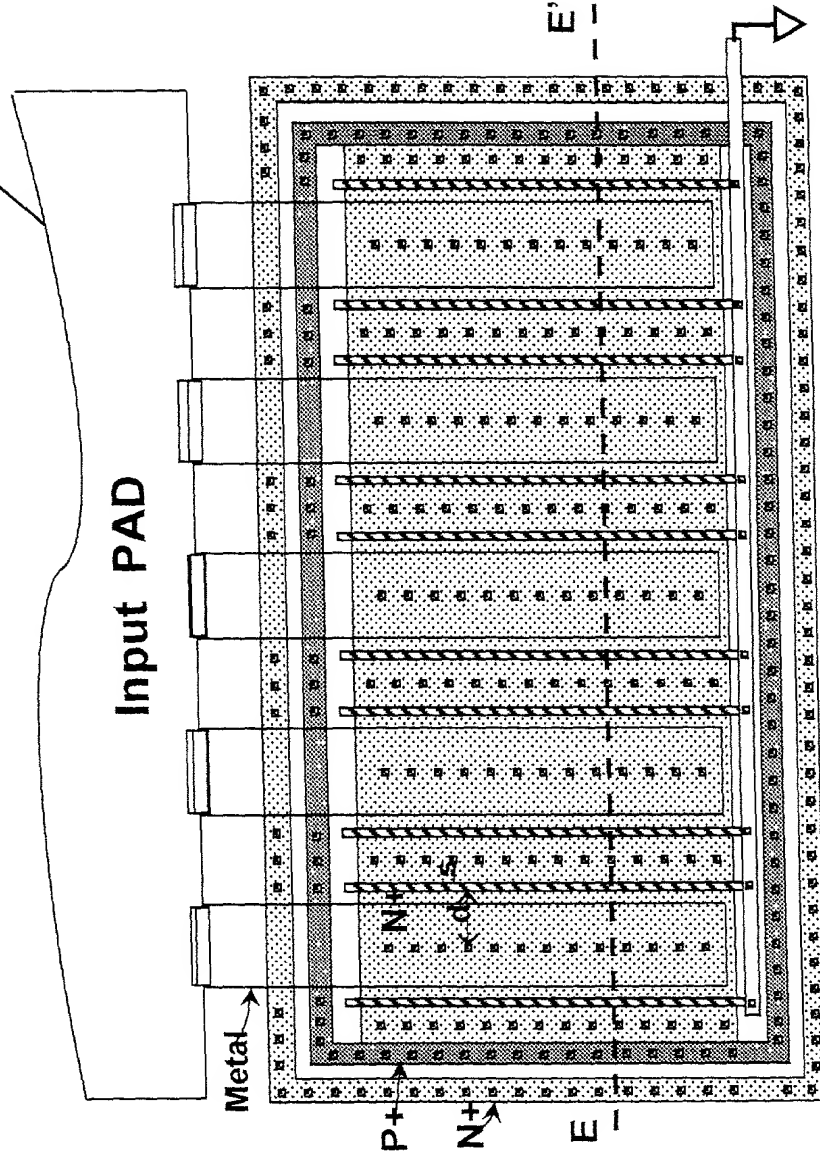


Fig.10(b)

106

Input PAD

Metal

P<sup>+</sup>

N<sup>+</sup>

F<sup>-</sup>

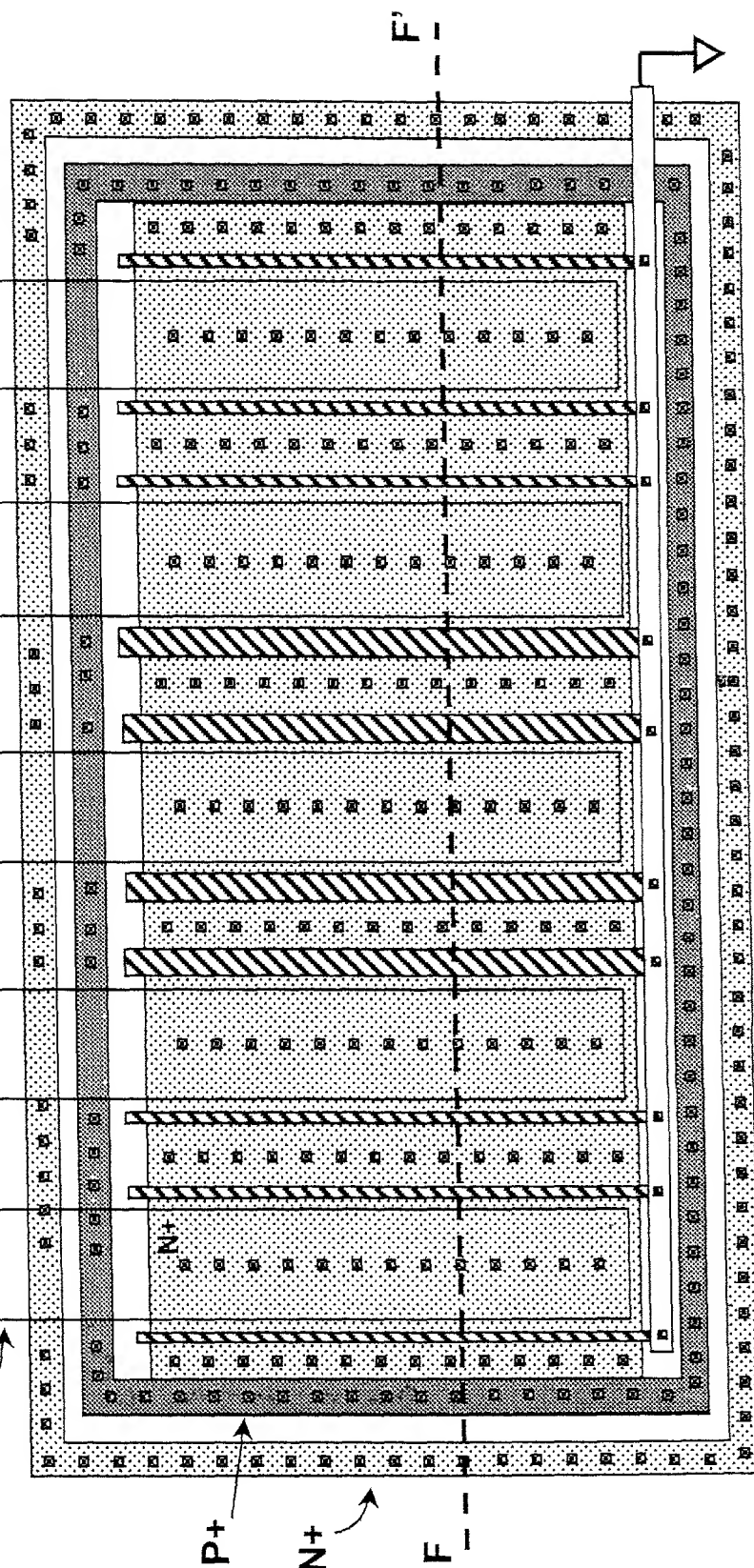


Fig.11(a)

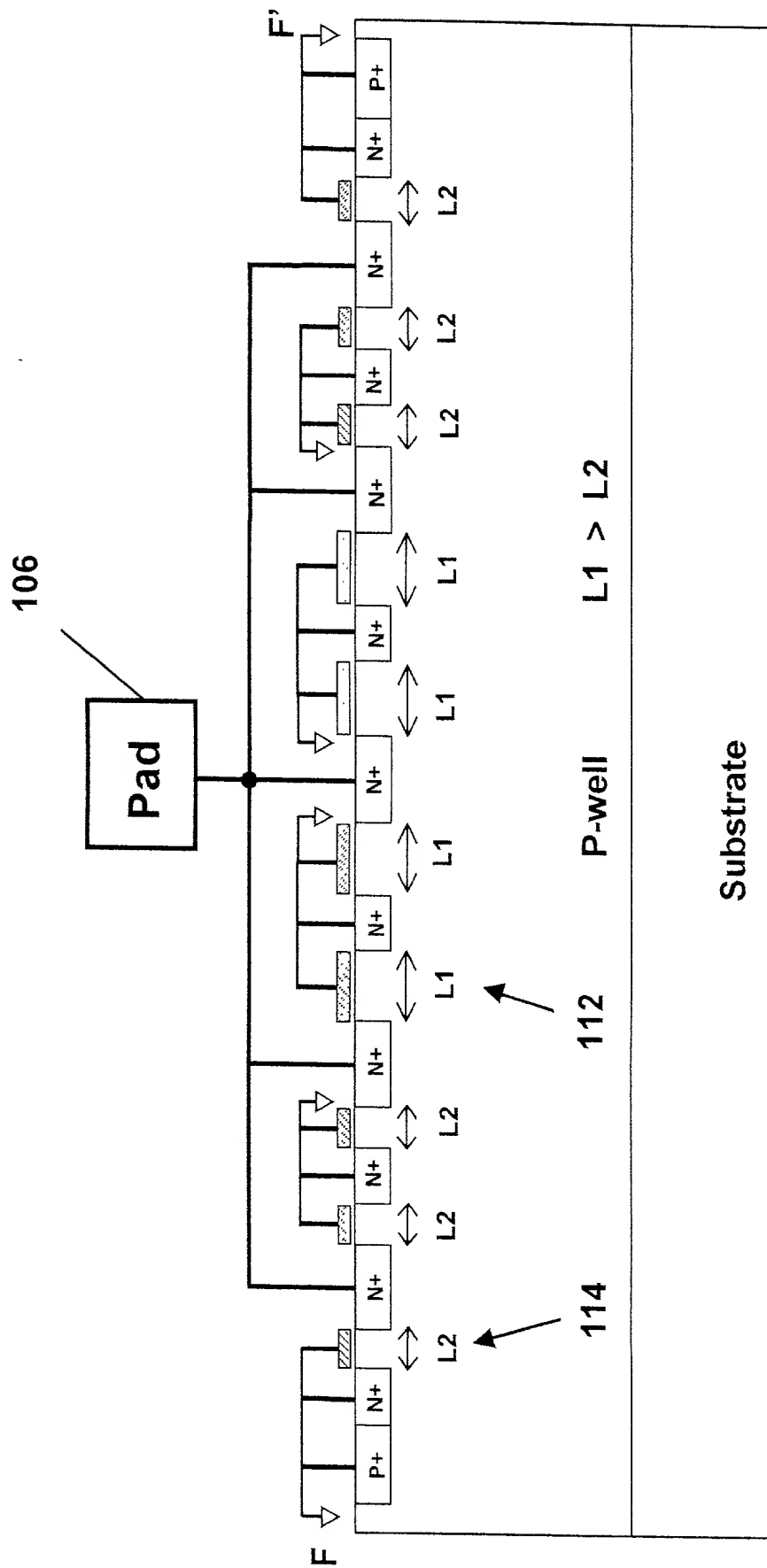


Fig.11(b)

106

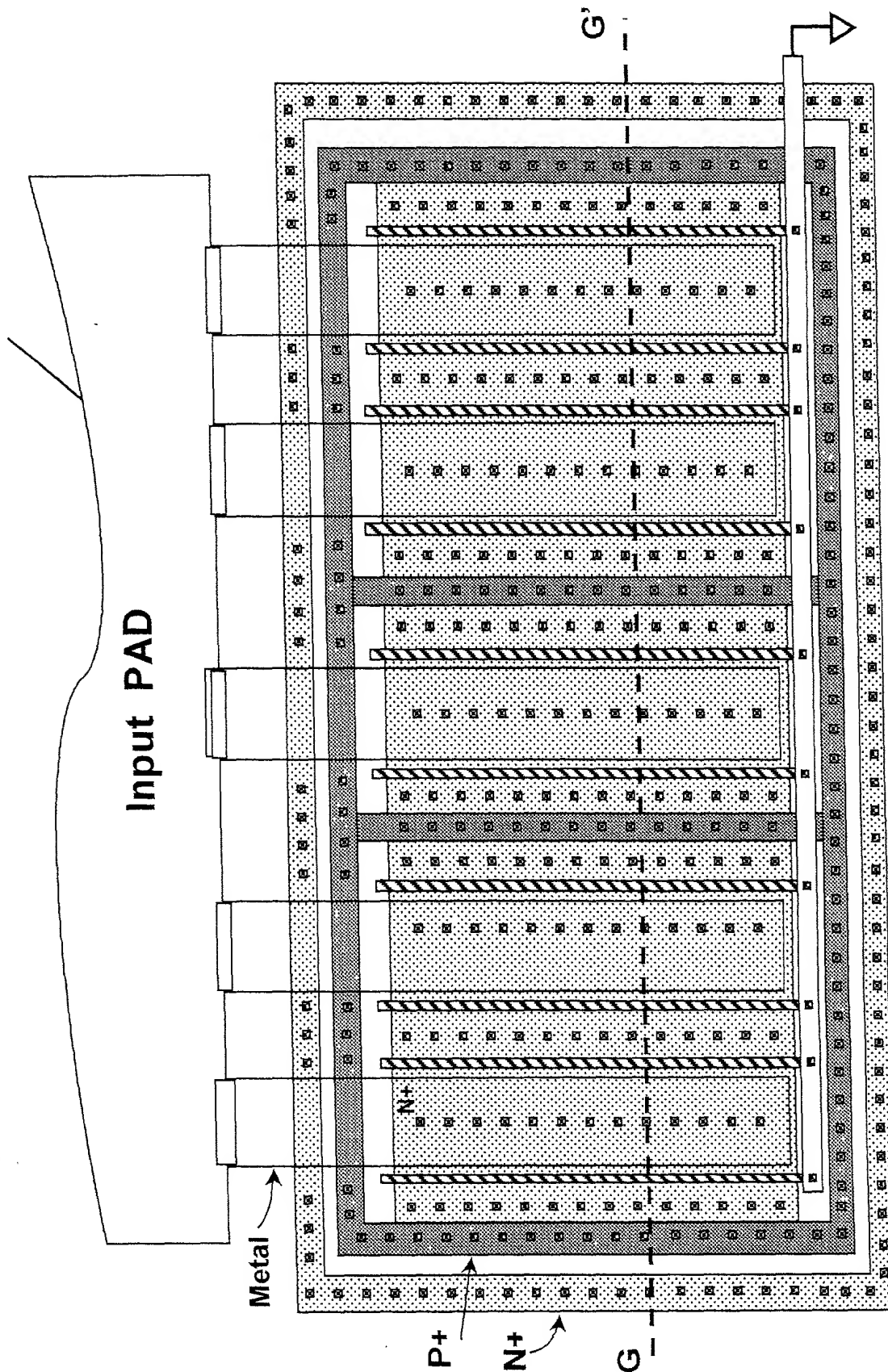


Fig.12(a)

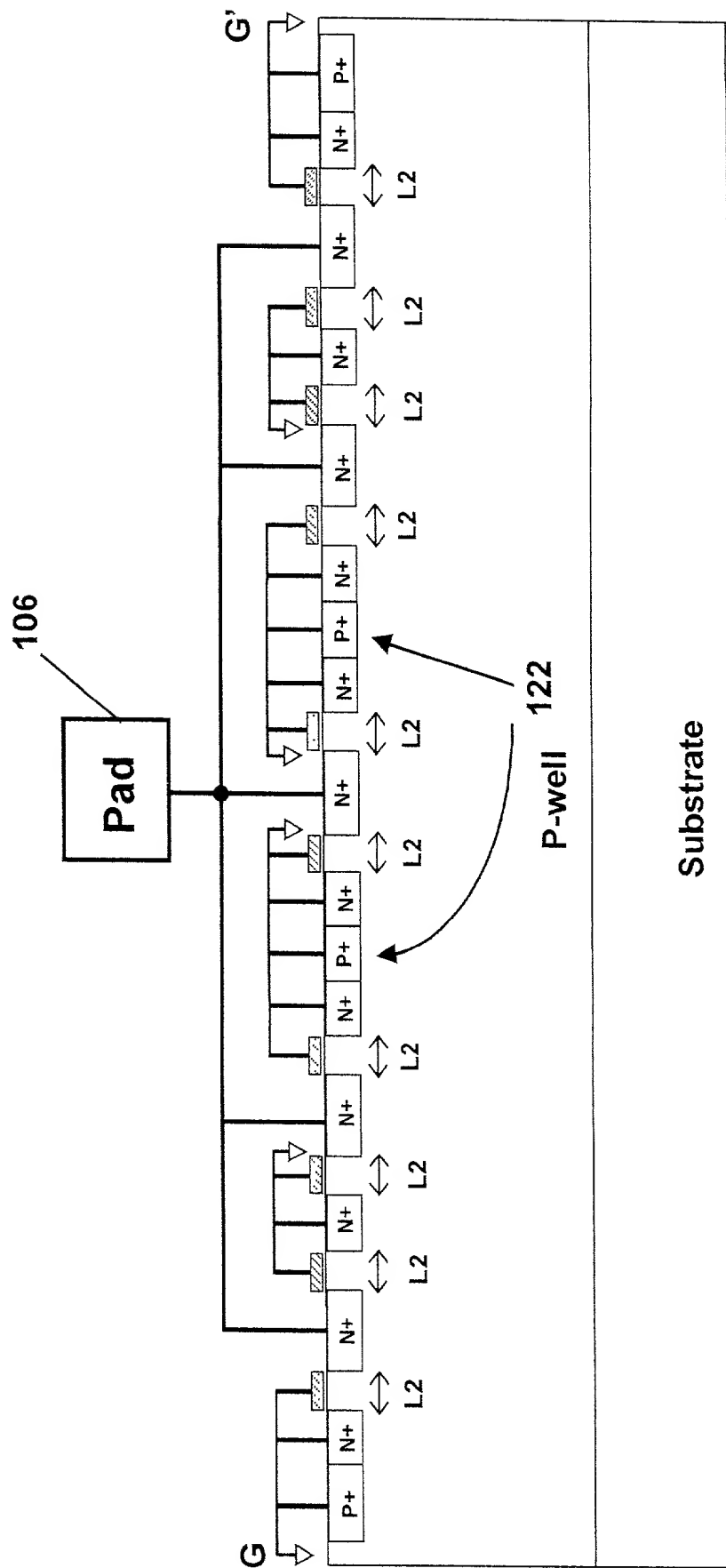


Fig.12(b)

106

Input PAD

Metal

P+

N+

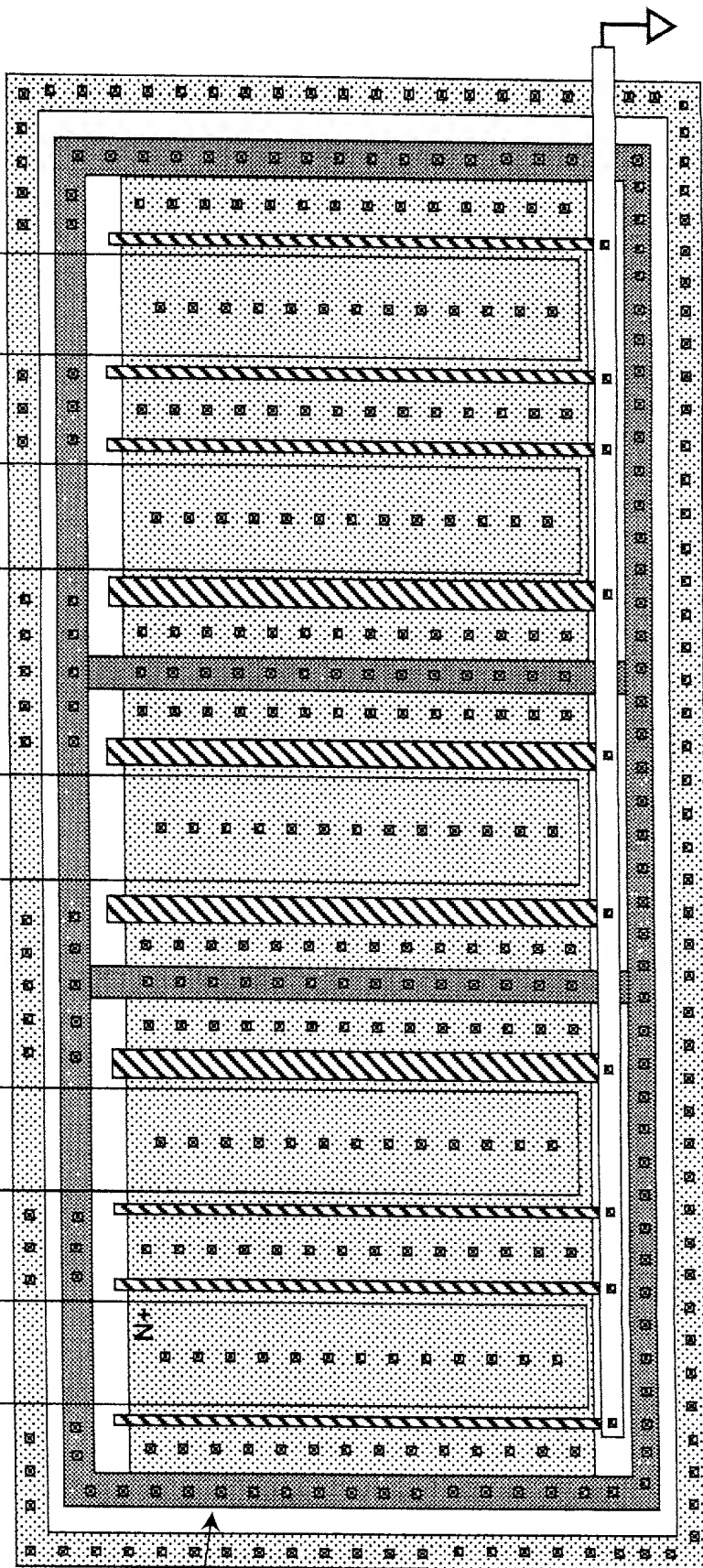


Fig.13

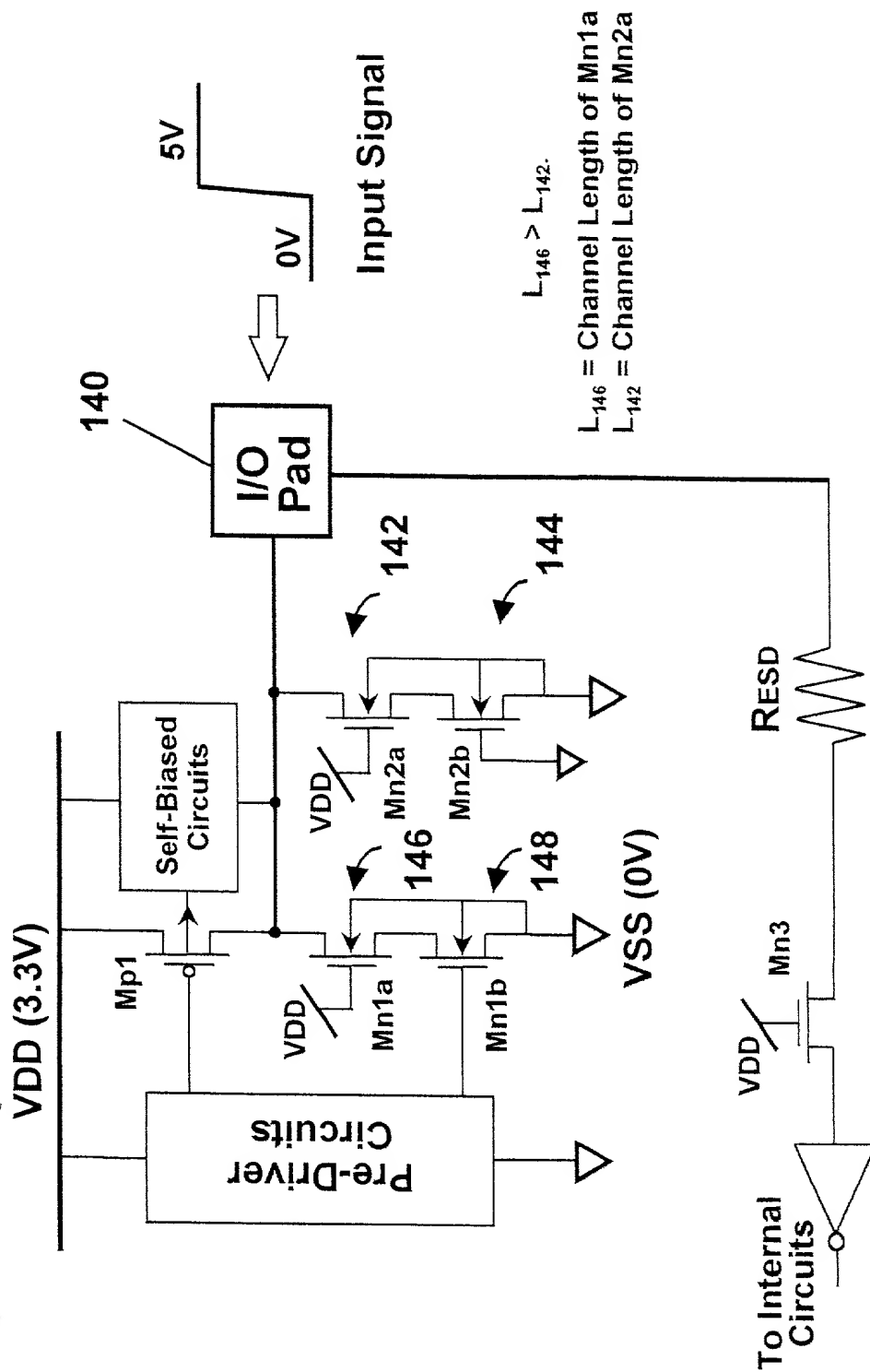


Fig.14(a)

140

I/O PAD

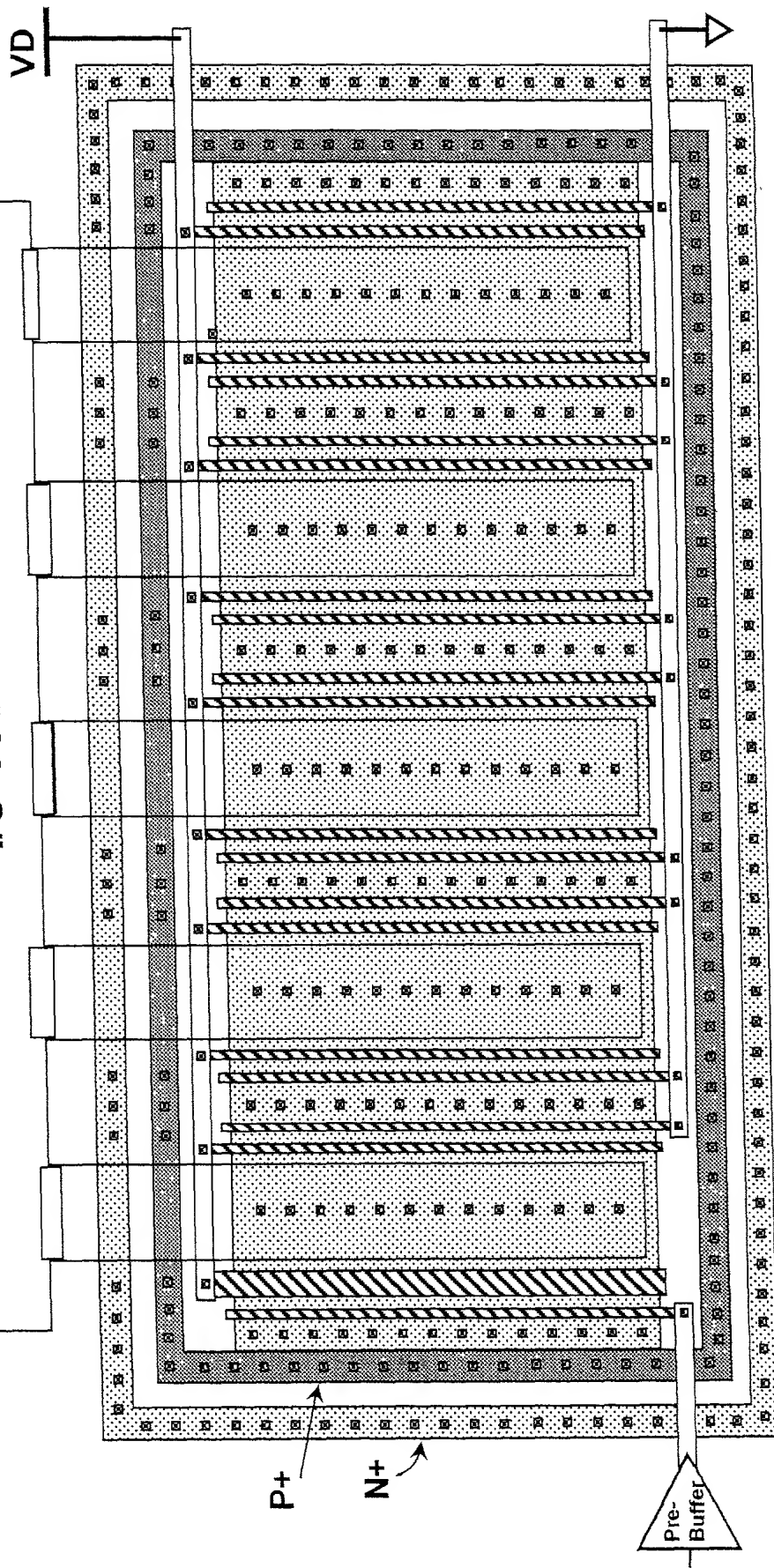


Fig. 14(b)